

## **Attachment A to Resolution No. R12-xxx**

### **Amendment to the Water Quality Control Plan for the Los Angeles Region to Revise the Total Maximum Daily Load for Bacteria in the Malibu Creek Watershed**

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on [Insert date]

#### **Amendments:**

##### **Table of Contents**

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries  
7-10 Malibu Creek and Lagoon Bacteria TMDL

##### **List of Figures, Tables and Inserts**

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)

Tables

7-10 Malibu Creek and Lagoon Bacteria TMDL

7-10.1. Malibu Creek and Lagoon Bacteria TMDL: Elements

7-10.2. Malibu Creek and Lagoon Bacteria TMDL: Final Allowable Exceedance Days by  
Sampling Location

7-10.3. Malibu Creek and Lagoon Bacteria TMDL: Significant Dates

#### **Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries, Section 7-10 (Malibu Creek and Lagoon Bacteria TMDL)**

This TMDL was adopted by the Regional Water Quality Control Board on December 13, 2004.

This TMDL was approved by:

The State Water Resources Control Board on September 22, 2005.

The Office of Administrative Law on December 1, 2005.

The U.S. Environmental Protection Agency on January 10, 2006.

This TMDL was revised and adopted by the Regional Water Quality Control Board on [Insert date].

This revised TMDL was approved by:

The State Water Resources Control Board on [Insert Date].

The Office of Administrative Law on [Insert Date].

The U.S. Environmental Protection Agency on [Insert Date].

The following table includes the elements of this TMDL.

## Attachment A to Resolution No. R12-xxx

**Table 7-10.1. Malibu Creek and Lagoon Basins Bacteria TMDL: Elements**

Element	Key Findings and Regulatory Provisions
<i>Problem Statement</i>	Elevated bacterial indicator densities are causing impairment of the water contact recreation (REC-1) beneficial use at Malibu Creek, Lagoon, and adjacent beach. Swimming in waters with elevated bacterial indicator densities has long been associated with adverse health effects. Specifically, local and national epidemiological studies compel the conclusion that there is a causal relationship between adverse health effects and recreational water quality, as measured by bacterial indicator densities.
<i>Numeric Target (Interpretation of the numeric water quality objective, used to calculate the waste load allocations)</i>	<p>The TMDL has a multi-part numeric target based on the bacteriological water quality objectives for marine and fresh water to protect the water contact recreation use. <u>These targets are the most appropriate indicators of public health risk in recreational waters.</u></p> <p>These bacteriological objectives are set forth in Chapter 3 of the Basin Plan.<sup>1</sup> The objectives are based on four bacterial indicators and include both geometric mean limits and single sample limits. The Basin Plan objectives that serve as the numeric targets for this TMDL are:</p> <p>In Marine Waters Designated for Water Contact Recreation (REC-1)</p> <p><u>1. Geometric Mean Limits</u></p> <p>a. Total coliform density shall not exceed 1,000/100 ml.  b. Fecal coliform density shall not exceed 200/100 ml.  c. <i>Enterococcus</i> density shall not exceed 35/100 ml.</p> <p><u>2. Single Sample Limits</u></p> <p>a. Total coliform density shall not exceed 10,000/100 ml.  b. Fecal coliform density shall not exceed 400/100 ml.  c. <i>Enterococcus</i> density shall not exceed 104/100 ml.  d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.</p> <p>In Fresh Waters Designated for Water Contact Recreation (REC-1)</p> <p>1. Geometric Mean Limits</p> <p>a. <i>E. coli</i> density shall not exceed 126/100 ml.  <del>b. Fecal coliform density shall not exceed 200/100 ml.</del></p> <p>2. Single Sample Limits</p> <p>a. <i>E. coli</i> density shall not exceed 235/100 ml.  <del>b. Fecal coliform density shall not exceed 400/100 ml.</del></p>

<sup>1</sup> The bacteriological objectives were revised by a Basin Plan amendment adopted by the Regional Board on October 25, 2001, and subsequently approved by the State Water Resources Control Board, the Office of Administrative Law and finally by U.S. EPA on September 25, 2002. The bacteriological objectives for freshwater were revised a second time by a Basin Plan amendment adopted by the Regional Board on July 8, 2010, and subsequently approved by the State Water Resources Control Board, the Office of Administrative Law and finally by U.S. EPA on December 5, 2011.

## Attachment A to Resolution No. R12-xxx

Element	Key Findings and Regulatory Provisions
	<p>These objectives are generally based on an acceptable health risk for marine recreational waters of 19 illnesses per 1,000 exposed individuals as set by the US EPA (US EPA, 1986).</p> <p>The targets apply throughout the year. The final compliance point for the targets is the point at which the effluent from a discharge initially mixes with the receiving water.</p> <p><del>In this TMDL, Implementation-implementation</del> of the above bacteria objectives and the associated TMDL numeric targets is achieved using a ‘reference system/anti-degradation approach’ rather than the alternative ‘natural sources exclusion approach’ or strict application of the single sample objectives. <del>As required by the federal Clean Water Act and Porter-Cologne Water Quality Control Act</del> California Water Code, Basin Plans include beneficial uses of waters, water quality objectives to protect those uses, an anti-degradation policy, collectively referred to as water quality standards, and other plans and policies necessary to implement water quality standards. <del>The ‘reference system/anti-degradation approach’ means that on This TMDL uses a “reference system/anti-degradation approach” to implement the water quality objectives per the implementation provisions in Chapter 3. On the basis of the historical exceedance frequency at Southern California reference reaches, levels at existing monitoring locations, including a local reference beach within Santa Monica Bay, a certain number of daily exceedances of the single sample bacteria objectives are permitted. The allowable number of exceedance days is set such that (1) bacteriological water quality at any site is at least as good as at a designated reference site within the watershed and (2) there is no degradation of existing bacteriological water quality. This approach recognizes that there are natural sources of bacteria that may cause or contribute to exceedances of the single sample objectives and that it is not the intent of the Regional Board to require treatment or diversion of natural coastal creeks or to require treatment of natural sources of bacteria from undeveloped areas.</del></p> <p>The geometric mean targets may not be exceeded at any time. <del>The rolling 30-day</del>For the purposes of this TMDL, the geometric means <del>will</del> shall be calculated <del>weekly as a rolling geometric mean using 5 or more samples, for six week periods starting all calculation weeks on Sunday on each day. If weekly sampling is conducted, the weekly sample result will be assigned to the remaining days of the week in order to calculate the daily rolling 30-day geometric mean.</del> For the single sample targets, each existing monitoring site is assigned an allowable number of exceedance days for <del>three-two</del> time periods (1) <del>summer-dry-weather (April 1 to October 31), (2) winter-dry-weather (November 1 to March 31), and (3) wet-weather (defined as days with 0.1 inch of rain or greater and the three days following the rain event.)</del></p>
<i>Source Analysis</i>	Fecal coliform bacteria may be introduced from a variety of sources

## Attachment A to Resolution No. R12-xxx

Element	Key Findings and Regulatory Provisions
	<p>including storm water runoff, dry-weather runoff, onsite wastewater treatment systems, and animal wastes. An inventory of possible point and nonpoint sources of fecal coliform bacteria to the waterbody was compiled, and both simple methods and computer modeling were used to estimate bacteria loads for those sources. Source inventories were used in the analysis to identify all potential sources within the Malibu Creek watershed, modeling was used to identify the potential delivery of pathogens into the creeks and the lagoon.</p>
<p><i>Loading Capacity</i></p>	<p>The loading capacity is defined in terms of bacterial indicator densities, which is the most appropriate for addressing public health risk, and is equivalent to the numeric targets, listed above. As the numeric targets must be met at the point where the effluent from storm drains or other discharge initially mixes with the receiving water throughout the day, no degradation or dilution allowance is provided.</p>
<p><i>Waste Load Allocations (for point sources)</i></p>	<p>Waste Load Allocations (WLAs) <u>assigned to municipal separate storm sewer system discharges</u> are expressed as the number of daily or weekly sample days that may exceed the single sample limits or <del>30-day</del> geometric mean limits as identified under “Numeric Target.” WLAs are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection.</p> <p><del>Zero days of</del><u>No</u> exceedances are allowed for the <del>30-day</del> geometric mean limits. The allowable days of exceedance for the single sample limits differ depending on season, dry weather or wet-weather, and by sampling locations as described in Table 7-10.2.</p> <p><del>The allowable number of exceedance days for a monitoring site for each time period is based on the lesser of two criteria (1) exceedance days in the designated reference system and (2) exceedance days based on historical bacteriological data at the monitoring site. This ensures that bacteriological water quality is at least as good as that of a largely undeveloped system and that there is no degradation of existing water quality. However, existing data indicates that the number of exceedance days for all locations assessed in this TMDL were greater than the allowable exceedance days (i.e., number of exceedance days greater than the number at the reference sites).</del></p> <p>For each monitoring site, allowable exceedance days are set on an annual basis as well as for <del>three-two</del> time periods. These <del>three-two</del> periods are:</p> <ol style="list-style-type: none"> <li>1. <del>summer</del> dry-weather (<del>April 1 to October 31</del>)</li> <li>2. <del>winter</del> dry-weather (<del>November 1 to March 31</del>)</li> <li>3. <del>2.</del> wet-weather (defined as days of 0.1 inch of rain or more plus three days following the rain event).</li> </ol> <p>The responsible jurisdictions and responsible agencies are the <u>permittees and co-permittees regulated under municipal separate storm</u></p>

## Attachment A to Resolution No. R12-xxx

Element	Key Findings and Regulatory Provisions
	<p><u>sewer system (MS4) permits including the</u> County of Los Angeles, <u>Los Angeles County Flood Control District,</u> County of Ventura, <u>Ventura County Watershed Protection District,</u> the cities of Malibu, Calabasas, Agoura Hills, Hidden Hills, <del>Simi Valley,</del> Westlake Village, and Thousand Oaks; Caltrans, and the California Department of Parks and Recreation. <u>The responsible jurisdictions and responsible agencies include the permittees and co-permittees of the <del>municipal storm water (MS4)</del> permits for Los Angeles County and Ventura County, and Caltrans <u>and any future Phase II MS4 permits.</u> The storm water permittees are individually responsible for the discharges from their municipal separate storm sewer systems to Malibu Creek, Malibu Lagoon or tributaries thereto. The California Department of Parks and Recreation (State Parks), as the owner of the Malibu Lagoon and Malibu Creek State Park, is the responsible agency for these properties. However, since the reference watershed approach used in developing this TMDL is intended to make allowances for natural sources, State Parks is only responsible for: conducting a study of bacteria loadings from birds in the Malibu Lagoon, water quality monitoring, and compliance with load allocations applicable to anthropogenic sources on State Park property (e.g., onsite wastewater treatment systems). The Santa Monica Mountains Conservancy and the National Park Service as the owner of natural parkland also are responsible for water quality monitoring and compliance with load allocations resulting from anthropogenic sources (e.g., onsite wastewater treatment systems) from lands under their jurisdiction.</u></p> <p><del>As discussed in "Source Analysis", discharges from</del> <u>The Tapia Water Reclamation Facility (WWRF) discharging to Malibu Creek is given individual WLAs equal to the bacteriological objectives contained in Chapter 3 during dry weather and wet weather.</u></p> <p><u>Discharges from general NPDES permits, general industrial storm water permits and general construction storm water permits are not expected to be a significant source of bacteria. Additionally, these discharges are not eligible for the reference system approach set forth in the implementation provisions for the bacteriological objectives in Chapter 3. Therefore, the waste load allocations for these discharges for all time periods are the bacteriological objectives contained in Chapter 3. Any future enrollees under a general NPDES permit, general industrial storm water permit or general construction storm water permit within the Malibu Creek watershed management area will also be subject to a WLA based on these bacteriological objectives.</u></p> <p><del>and effluent irrigation, and general construction storm water permits are not expected to be a significant source of bacteria. Therefore, the WLAs for these discharges are zero (0) days of allowable exceedances for all three time periods and for the single sample limits and the rolling 30-day geometric mean.</del></p>

## Attachment A to Resolution No. R12-xxx

Element	Key Findings and Regulatory Provisions
<p><i>Load Allocations (for nonpoint sources)</i></p>	<p>Load Allocations (LA) are expressed as the number of daily or weekly sample days that may exceed the single sample limits or <del>30-day</del> geometric mean limits as identified under “Numeric Target.” LAs are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection.</p> <p><del>Zero days of No</del> exceedances are allowed for the <del>30-day</del> geometric mean limits. The allowable days of exceedance for the single sample limits differ depending on season, dry weather or wet-weather, and by sampling locations as described in Table 7-10.2.</p> <p><del>The allowable number of exceedance days for a monitoring site for each time period is based on the lesser of two criteria (1) exceedance days in the designated reference system and (2) exceedance days based on historical bacteriological data at the monitoring site. This ensures that bacteriological water quality is at least as good as that of a largely undeveloped system and that there is no degradation of existing water quality. However, existing data indicates that the number of exceedance days for all locations assessed in this TMDL were greater than the allowable exceedance days.</del></p> <p>For each monitoring site, allowable exceedance days are set on an annual basis as well as for <del>three-two</del> time periods. These <del>three-two</del> periods are:</p> <ol style="list-style-type: none"> <li>1. <del>summer</del> dry-weather (<del>April 1 to October 31</del>)</li> <li>2. <del>winter</del> dry-weather (<del>November 1 to March 31</del>)</li> <li>3. wet-weather (defined as days of 0.1 inch of rain or more plus three days following the rain event).</li> </ol> <p>Onsite wastewater treatment systems were identified as the major nonpoint anthropogenic source within the watershed. The responsible agencies are the county and city health departments and/or other local agencies that oversee installation and operation of on-site wastewater treatment systems. However, owners of on-site wastewater treatment systems are responsible for actual discharges.</p>
<p><i>Implementation</i></p>	<p>The regulatory mechanisms to implement the TMDL may include, but are not limited to the Los Angeles County <del>Municipal Storm Water</del>MS4 NPDES Permit (<del>MS4</del>), Ventura County <del>Municipal Storm Water</del>MS4 NPDES Permit, the Caltrans Storm Water Permit, <u>any future Phase II MS4 permits</u>, waste discharge requirements (WDRs), Memorandum of <del>U</del>nderstandings (MOUs), revised MOUs, <u>or other appropriate mechanisms consistent with the Nonpoint Source Implementation and Enforcement Policy</u>, general NPDES permits, general industrial storm water permits, general construction storm water permits, <del>and</del> the authority contained in Sections 13225, 13263, <del>and</del> 13267, <u>and 13383</u> of the <u>California</u> Water Code, <u>and other appropriate regulatory mechanisms</u>. Each NPDES permit assigned a WLA shall be reopened or amended at reissuance, in accordance with applicable laws, to</p>

## Attachment A to Resolution No. R12-xxx

Element	Key Findings and Regulatory Provisions
	<p>incorporate the applicable WLAs as a permit requirement. <del>This TMDL will be implemented in <u>three-two</u> phases <del>over a ten-year period</del> as outlined in Table 7-10.3. <del>Within three years of the effective date of the TMDL, compliance with the allowable number of summer dry weather exceedance days and the rolling 30-day geometric mean targets must be achieved. In response to a written request from the responsible jurisdiction or responsible agency subject to conditions described in Table 7-10.3, the Executive Officer of the Regional Board may extend the compliance date for the summer dry weather allocations from 3 to up to six years from the effective date of this TMDL. Within six years of the effective date of the TMDL</del>By January 24, 2009, compliance with the allowable number of <del>winter</del> dry-weather exceedance days <del>and the rolling 30-day geometric mean targets</del> must be achieved. <del>Within ten years of the effective date of the TMDL</del>By July 15, 2021, compliance with the allowable number of wet-weather exceedance days and <del>rolling 30-day</del>the geometric mean targets must be achieved.</del></p> <p><del>To be consistent with the Santa Monica Bay (SMB) Beaches TMDLs, the Regional Board intends to reconsider this TMDL in coordination with the reconsideration of the SMB Beaches TMDLs. The SMB Beaches TMDLs are scheduled to be reviewed in July 2007 (four years from the effective date of the SMB Beaches TMDLs). The review will include a possible revision to the allowable winter dry weather and wet-weather exceedance days based on additional data on bacterial indicator densities in the wave wash; to re-evaluate the reference system selected to set allowable exceedance levels; and to re-evaluate the reference year used in the calculation of allowable exceedance days. In addition, the method for applying the 30-day geometric mean limit also will be reviewed. The Malibu Creek Bacteria TMDL is scheduled to be reconsidered in three years from the effective date, which is expected to approximately coincide with the reassessment required under the SMB Beaches TMDLs.</del></p>
<i>Margin of Safety</i>	<p>A margin of safety has been implicitly included through the following conservative assumptions.</p> <ul style="list-style-type: none"> <li>• The watershed loadings were based on the 90<sup>th</sup> percentile year for rain (1993) based on the number of wet weather days. This should provide conservatively high runoff from different land uses for sources of storm water loads</li> <li>• The watershed loadings were also based on a very dry rain year (1994). This ensures compliance with the numeric target during low flows when septic systems and dry urban runoff loads are the major bacterial sources.</li> <li>• -The TMDL was based on meeting the fecal <u>coliform</u> 30-day geometric mean target of 200 MPN/ 100 ml, which for these watersheds was estimated to be more stringent level than the allowable exceedance of the single sample standard. This approach also provides assurance that the <i>E. coli</i> single sample standard will</li> </ul>

## Attachment A to Resolution No. R12-xxx

Element	Key Findings and Regulatory Provisions
	<p>not be exceeded.</p> <ul style="list-style-type: none"> <li>The load reductions established in this TMDL were based on reduction required during the two different critical year conditions. A wet year when storm loads are high, and a more typical dry year when base flows and assimilative capacity is low. This adds a margin of safety for more typical years.</li> </ul> <p>In addition, an explicit margin of safety has been incorporated, as the load allocations will allow exceedances of the single sample targets no more than 5% of the time on an annual basis, based on the cumulative allocations proposed for dry and wet weather. Currently, the Regional Board concludes that there is water quality impairment if more than 10% of samples at a site exceed the single sample bacteria objectives annually.</p>
<p><i>Seasonal Variations and Critical Conditions</i></p>	<p>Seasonal variations are addressed by developing separate waste load allocations for <del>three-two</del> time periods (<del>summer-dry-weather, winter-dry weather,</del> and wet-weather) based on public health concerns and observed natural background levels of exceedance of bacterial indicators.</p> <p><u>The critical condition for this bacteria TMDL is wet weather generally, when data for the reference system indicate that the single sample bacteria objectives are exceeded on 19% of the wet-weather days sampled. To more specifically identify a critical condition within wet weather in order to set the allowable exceedance days, the 90<sup>th</sup> percentile ‘storm year’<sup>2</sup> in terms of wet days is used as the reference year. To establish the critical condition for the wet days, we used rain data from 1993. Based on data from the Regional Board's Santa Monica Bay TMDL this represents the 90th percentile rain year based on rain data from 1947 to 2000. To further evaluate the critical conditions, we modeled a representative dry year. The dry year critical condition was based on 1994, which was the 50<sup>th</sup> percentile year in terms of dry weather days for the period of 1947-2000. The number of wet-weather days in the 1993 reference year was 75 days, and the number of dry-weather days was 290 days.</u></p>
<p><i>Compliance Monitoring</i></p>	<p>Responsible jurisdictions and agencies shall submit a compliance monitoring plan to the Executive Officer of the Regional Board for approval. The compliance monitoring plan shall specify sampling frequency (daily or weekly) and sampling locations and that will serve as compliance points. <del>This compliance monitoring program is to determine the effectiveness of the TMDL and not to determine compliance with individual load or wasteload allocations for purposes of enforcement.</del></p> <p><u>Responsible jurisdictions and agencies shall submit an outfall</u></p>

<sup>2</sup> For purposes of this TMDL, a ‘storm year’ means November 1 to October 31. The 90<sup>th</sup> percentile storm year was 1993 with 75 wet days at the LAX meteorological station.

## Attachment A to Resolution No. R12-xxx

Element	Key Findings and Regulatory Provisions
	<p><u>monitoring plan within 6 months of the effective date of the TMDL revised by Resolution R12-XXX. The outfall monitoring plan shall propose an adequate number of representative outfalls to be sampled, a sampling frequency, and protocol for enhanced outfall monitoring as a result of an in-stream exceedance. Responsible jurisdictions and agencies can use existing outfall monitoring station in the MS4 permit, where appropriate for both the permit and TMDL objectives.</u></p> <p>If the number of exceedance days is greater than the allowable number of exceedance days the water body segment shall be considered out-of-compliance with the TMDL. Responsible jurisdictions or agencies shall not be required to initiate an investigation detailed in the next paragraph if a demonstration is made that bacterial sources originating within the jurisdiction of the responsible agency have not caused or contributed to the exceedance.</p> <p>If a single sample shows the discharge or contributing area to be out of compliance, the Regional Board may require, through permit requirements or the authority contained in Water Code section 13267, daily sampling at the downstream location (if it is not already) until all single sample events meet bacteria water quality objectives. Furthermore, if a creek location is out of compliance as determined in the previous paragraph, the <del>Regional Board shall require</del> responsible agencies <del>to shall</del> initiate an investigation <u>within 24 hours of receiving analytical results</u>, which at a minimum shall include daily sampling in the target receiving waterbody reach or at the existing monitoring location until all single sample events meet bacteria water quality objectives.</p> <p>The County of Los Angeles, <u>Los Angeles County Flood Control District</u>, County of Ventura, <u>Ventura County Watershed Protection District</u>, and municipalities within the Malibu Creek watershed, Caltrans, and the California Department of Parks and Recreation are strongly encouraged to pool efforts and coordinate with other appropriate monitoring agencies in order to meet the challenges posed by this TMDL by developing cooperative compliance monitoring programs.</p>

~~Note: The complete staff report for the TMDL is available for review upon request.~~

## Attachment A to Resolution No. R12-xxx

**Table 7-10.2. Malibu Creek and Lagoon Bacteria TMDL: Final Annual Allowable Exceedance Days for Single Sample Limits by Sampling Location**

Compliance Deadline		6 years after effective date <u>January 24, 2012</u>		10 years after effective date <u>July 15, 2021</u>	
		Winter-Dry Weather <sup>^**</sup>		Wet Weather <sup>^**</sup>	
		November 1 - March 31		November 1 - October 31	
Station ID	Location Name	Daily sampling (No. days)	Weekly sampling (No. days)	Daily sampling (No. days)	Weekly sampling (No. days)
LA RWQCB	Triunfo Creek	<del>35</del>	1	<del>1715</del>	<del>32</del>
LA RWQCB	Lower Las Virgenes Creek	<del>35</del>	1	<del>1715</del>	<del>32</del>
LA RWQCB	Lower Medea Creek	<del>35</del>	1	<del>1715</del>	<del>32</del>
LVMWD (R-9)	Upper Malibu Creek, above Las Virgenes Creek	<del>35</del>	1	<del>1715</del>	<del>32</del>
LVMWD (R-2)	Middle Malibu Creek, below Tapia discharge 001	<del>35</del>	1	<del>1715</del>	<del>32</del>
LVMWD (R-3)	Lower Malibu Creek, 3 mi below Tapia	<del>35</del>	1	<del>1715</del>	<del>32</del>
LVMWD (R-4)	Malibu Lagoon, above PCH	<del>35</del>	1	<del>1715</del>	<del>32</del>
LVMWD (R-11)	Malibu Lagoon, below PCH	<del>35</del>	1	<del>1715</del>	<del>32</del>
-----	Other sampling stations as identified in the Compliance Monitoring Plan as approved by the Executive Officer including at least one sampling station in each subwatershed, and areas where frequent REC-1 use is known to occur.	<del>35</del>	1	<del>1715</del>	<del>32</del>

Notes: The number of allowable exceedances is based on the lesser of (1) the reference system or (2) existing levels of exceedance based on historical monitoring data.

The allowable number of exceedance days ~~during winter-dry-weather~~ is calculated based on the ~~10th-90th~~ percentile storm year in terms of ~~dry-wet~~ days at the LAX meteorological station

~~The allowable number of exceedance days during wet-weather is calculated based on the 90th percentile storm year in terms of wet days at the LAX meteorological station.~~

<sup>^</sup> A dry day is defined as a non-wet day. A wet day is defined as a day with a 0.1- inch or more of rain and the three days following the rain event.

<sup>\*</sup> ~~The compliance date may be extended by the Executive Officer to up to 6 years from the effective date.~~

<sup>\*\*</sup> ~~A revision of the TMDL is scheduled for four years after the effective date of the Santa Monica Bay Beaches TMDLs in order to re-evaluate the allowable exceedance days during winter-dry-weather and wet-weather based on additional monitoring data and the results of the study of relative loading from storm drains versus birds.~~

## Attachment A to Resolution No. R12-xxx

**Table 7-10.3. Malibu Creek and Lagoon Bacteria TMDL: Significant Dates**

Date	Action
<p><del>120 days after the effective date of this TMDL</del>  <u>May 24, 2006</u></p>	<p>Responsible jurisdictions and responsible agencies must submit a comprehensive bacteria water quality monitoring plan for the Malibu Creek Watershed to the Executive Officer of the Regional Board. The plan must be approved by the Executive Officer before the monitoring data can be considered during the implementation of the TMDL. In developing the 13267 order, the EO will consider costs in relation to the need for data. With respect to benefits to be gained, the TMDL staff report demonstrates the significant impairment and bacteria loading. Further documenting success or failure in achieving waste load allocations will benefit the responsible agencies and all recreational water users.</p> <p>The purpose of the plan is to better characterize existing water quality as compared to water quality at the reference watershed, and ultimately, to serve as a compliance monitoring plan. The plan must provide for analyses of all applicable bacteria indicators for which the Basin Plan has established objectives including <i>E. coli</i>. For fresh water and <i>enterococcus</i> for marine water. The plan must also include sampling locations that are specified in Table 7-10.2, at least one location in each subwatershed, and areas where frequent REC-1 use is known to occur. However, this is not to imply that a mixing zone has been applied; water quality objectives apply throughout the watershed—not just at the sampling locations.</p>
<p><del>1 year after effective date of this TMDL</del>  <u>January 24, 2007</u></p>	<ol style="list-style-type: none"> <li>1. Responsible jurisdictions and responsible agencies shall provide a written report to the Regional Board outlining how each intends to cooperatively achieve compliance with the TMDL. The report shall include implementation methods, an implementation schedule, and proposed milestones. Specifically, the plan must include a comprehensive description of all steps to be taken to meet the <del>3-year summer</del> dry weather compliance schedule, including but not limited to a detailed timeline for all <del>category-categories</del> of bacteria sources under their jurisdictions including but not limited to nuisance flows, urban stormwater, on-site wastewater treatment systems, runoff from homeless encampments, horse facilities, and agricultural runoff.</li> <li><del>2. If the responsible jurisdiction or agency is requesting an extension of the summer dry weather compliance schedule, the plan must include a description of all local ordinances necessary to implement the detailed workplan and assurances that such ordinances have been adopted before the request for an extension is granted.</del></li> <li>3. Local agencies regulating on-site wastewater treatment systems shall provide a written report to the Regional Board's Executive Officer detailing the rationale and criteria used to identify high-risk areas where on-site systems have a potential to impact surface waters in the Malibu Creek watershed. Local agencies may use the approaches outlined below in (a) and (b), or an alternative approach as approved</li> </ol>

## Attachment A to Resolution No. R12-xxx

Date	Action
	<p>by the Executive Officer.</p> <p>(a) Responsible agencies may screen for high-risk areas by establishing a monitoring program to determine if discharges from OWTS have impacted or are impacting water quality in Malibu Creek and/or its tributaries. <u>A</u> surface water monitoring program demonstration must include monitoring locations upstream and downstream of the discharge, as well as a location at mid-stream (or at the approximate point of discharge to the surface water) of single or clustered OWTS. Surface water sampling frequency will be weekly for bacteria indicators and monthly for nutrients. <u>A</u> successful demonstration will show no statistically significant increase in bacteria levels in the downstream sampling location(s).</p> <p>(b) Responsible agencies may define the boundaries of high-risk or contributing areas or identify individual OWTS that are contributing to bacteria water quality impairments through groundwater monitoring or through hydrogeologic modeling as described below:</p> <p>(1) Groundwater monitoring must include monitoring in a well no greater than 50-feet hydraulically downgradient from the furthest extent of the disposal area, or property line of the discharger, whichever is less. <u>At</u> a minimum, sampling frequency for groundwater monitoring will be quarterly. <u>The</u> number, location and construction details of all monitoring wells are subject to approval of the Executive Officer.</p> <p>(2) Responsible agencies may use a risk assessment approach, which uses hydrogeologic modeling to define the boundaries of the high-risk and contributing areas. <u>A</u> workplan for the risk assessment study must be approved by the Executive Officer of the Regional Board.</p> <p>4. OWTS located in high-risk areas are subject to system upgrades as necessary to demonstrate compliance with applicable effluent limits and/or receiving water objectives.</p> <p><del>5. If a responsible jurisdiction or agency is requesting an extension to the wet-weather compliance schedule, the plan must include a description of the integrated water resources (IRP) approach to be implemented, identification of potential markets for water re-use, an estimate of the percentage of collected stormwater that can be re-used, identification of new local ordinances that will be required, a description of new infrastructure required, a list of potential adverse environmental impacts that may result from the IRP, and a workplan and schedule with significant milestones identified. Compliance with the wet-weather allocations</del></p>

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	<p style="color: red;"><del>shall be as soon as possible but under no circumstances shall it exceed 10 years for non-integrated approaches or extend beyond July 15, 2021 for an integrated approach. The Regional Board staff will bring to the Regional Board the aforementioned plans for consideration of extension of the wet weather compliance date as soon as possible.</del></p>
<p style="color: red;"><del>2 years after the effective date of this TMDL</del> <u>January 24, 2008</u></p>	<p>The California Department of Parks and Recreation shall provide the Regional Board Executive Officer, a report quantifying the bacteria loading from birds to the Malibu Lagoon.</p> <p>The Regional Board's Executive Officer shall require the responsible jurisdictions and responsible agencies to provide the Regional Board with a reference watershed study. The study shall be designed to collect sufficient information to establish a defensible reference condition for the Malibu Creek and Lagoon watershed.</p>
<p style="color: red;"><del>3 years after effective date of this TMDL</del> <sup>**</sup></p> <p style="color: red;"><del>** May be extended to up to 6 years from the effective date of this TMDL</del></p>	<p style="color: red;"><del>Achieve compliance with the applicable Load Allocations and Waste Load Allocations, as expressed in terms of allowable days of exceedances of the single sample bacteria limits and the 30-day geometric mean limit during summer dry weather (April 1 to October 31). In response to a written request from a responsible jurisdiction or responsible agency, the Executive Officer of the Regional Board may extend the compliance date for the summer dry weather allocations from 3 years to up to 6 years from the effective date of this TMDL. The Executive Officer's decision to extend the summer dry weather compliance date must be based on supporting documentation to justify the extension, including a detailed work plan, budget and contractual or other commitments by the responsible jurisdiction or responsible agency.</del></p>
<p style="color: red;"><del>3 years after effective date of this TMDL</del></p>	<p style="color: red;"><del>The Regional Board shall reconsider this TMDL to:</del></p> <ol style="list-style-type: none"> <li data-bbox="669 1291 1395 1375">(1) <del>Consider a natural source exclusion for bacteria loadings from birds in the Malibu Lagoon if all anthropogenic sources to the Lagoon have been controlled.</del></li> <li data-bbox="669 1375 1395 1564">(2) <del>Reassess the allowable winter dry weather and wet weather exceedance days based on additional data on bacterial indicator densities, and an evaluation of site specific variability in exceedance levels to determine whether existing water quality is better than water quality at the reference watershed;</del></li> <li data-bbox="669 1564 1395 1711">(3) <del>Reassess the allowable winter dry weather and wet weather exceedance days based on a re-evaluation of the selected reference watershed and consideration of other reference watersheds that may better represent reaches of the Malibu Creek and Lagoon.</del></li> <li data-bbox="669 1711 1395 1858">(4) <del>Consider whether the allowable winter dry weather and wet weather exceedance days should be adjusted annually dependent on the rainfall conditions and an evaluation of natural variability in exceedance levels in the reference system(s);</del></li> <li data-bbox="669 1858 1395 1898">(5) <del>Re-evaluate the reference year used in the calculation of</del></li> </ol>

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	<p style="text-align: center;"><del>allowable exceedance days, and (6) Re-evaluate whether there is a need for further clarification or revision of the geometric mean implementation provision.</del></p>
<p><del>6 years after the effective date of this TMDL</del> <u>January 24, 2012</u></p>	<p>Achieve compliance with the applicable Load Allocations and Waste Load Allocations, expressed as allowable exceedance days during <del>winter</del>-dry weather <del>(November 1-March 31)</del> <u>single sample limits and the rolling 30-day geometric mean limit.</u></p>
<p><del>10 years after the effective date of this TMDL</del> <u>July 15, 2021</u></p> <p><del>** May be extended up to July 15, 2021.</del></p>	<p>Achieve compliance with the wet-weather Load Allocations and Waste Load Allocations (expressed as allowable exceedance days for wet weather) and compliance with the <del>rolling 30-day</del> <u>geometric mean limit.</u></p> <p><del>The Regional Board may extend the wet-weather compliance date up to July 15, 2021 at the Regional Board's discretion, by adopting a subsequent Basin Plan amendment that complies with applicable law.</del></p>

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